Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

1. (Currently amended) A method of making a microarray with a macroporous polymer substrate having pore sizes that are specific to a biomolecule, the method comprising:

(a) obtaining a macroporous polymer substrate, wherein the macroporous polymer substrate is synthesized by a method comprising:

(i) obtaining ~~methacrylates~~ mono and polyfunctional monomers to form a polymerization mix; and

~~(ii) mixing the methacrylates in the presence of a porogenic solvent; and~~

(ii) initiating polymerization in the presence of a porogenic solvent to form a macroporous polymer substrate wherein the fraction of macropores within the final substrate is about the same as the volume fraction of the porogenic solvent in the initial polymerization mix;

(b) coating a surface with the substrate; and

(c) adding a plurality of the specific ~~biomolecules~~ biomolecule to the coated surface to form a microarray.

2. (Canceled).

3. (Previously presented) The method of claim 1, further comprising:

(a) obtaining at least one immobilization chemical for immobilization of biomolecules to the microarray; and

(b) adding the immobilization chemical to the macroporous polymer substrate.

4. (Original) The method of claim 3, wherein the macroporous polymer substrate is applied to a surface selected from the group consisting of glass, metal, silane, silicone, and plastics with vinyl.

5. (Currently amended) The method of claim 1, wherein the ~~biomolecules are~~ specific biomolecule is selected from the groups consisting of DNA, RNA, peptides, proteins, lipids, lipopolysaccharides, antibodies, and peptide mimetics.

6. (Canceled).

7. (Currently amended) The method of claim ~~6~~ 1, wherein the monofunctional ~~methacrylates~~ monomers are selected from the group consisting of alkyl-, epoxyalkyl-, hydroxyalkyl-, and polyoxyalkyl ethers of methacrylic acid.

8. (Currently amended) The method of claim ~~6~~ 1, wherein the polyfunctional monomers ~~methacrylates~~ are selected from the group consisting of dimethacrylates of ethylene glycol, di-, tri, and tetramethacrylates of polyols.

9. (Previously presented) The method of claim 1, wherein the methacrylates are selected from the group consisting of glycidyl methacrylate, 2-hydroxyethyl methocrylate, ethylene dimethacrylate, and 2,3-dihydroxybutone-1,4 diyl dimethocrylate.

10. (Previously presented) The method of claim 1, wherein the porogenic solvent is an aromatic alcohol.

11. (Original) The method of claim 10, wherein the aromatic alcohol is selected from the group consisting of cyclohexanol and dodecanol.

12. (Previously presented) The method of claim 1, wherein the porogenic solvent is an aliphatic alcohol.

13. (Previously presented) The method of claim 1, wherein the porogenic solvent is an aromatic alkyl derivative.

14. (Original) The method of claim 3, wherein the immobilization chemical is derivatized to include functional groups selected from the group consisting of aldehydes, succinimides and isothiocyanates.

15. (Original) The method of claim 3, wherein the immobilization chemical is selected from the group consisting of N-(methacryloyl) aminocaproic acid N-hydroxysuccinimide ether, 4-isothiocyanate-N-(methacryloyl) benzylamine, and N-(5,6-di-O-isopropylidene) hexyl acrylamide.

16. (Withdrawn) A method of analyzing molecular interactions, the method comprising the steps of:

(a) immobilizing at least one probe molecule to a macroporous polymer substrate comprising a monofunctional methacrylate, a polyfunctional methacrylate, and a solvent;

(b) obtaining at least one analyte molecule;

(c) providing suitable conditions for the probe-analyte interaction; and

(d) measuring signal from the interaction.

17. (Withdrawn) The method of claim 16, wherein the probe molecule is selected from the group consisting of antibodies, peptides, proteins, and DNA.

18. (Withdrawn) The method of claim 16, wherein the analyte is derived from a biological sample.

19. (Withdrawn) The method of claim 16, wherein the probe-analyte interaction is an antigen-antibody interaction.

20. (Withdrawn) The method of claim 16, wherein the probe-analyte interaction is a nucleic acid hybridization.

21. (Withdrawn) A microarray with a macroporous polymer substrate comprising:

a monofunctional methacrylate,

a polyfunctional methacrylate or a mixture thereof;

an immobilization chemical; and

a porogenic solvent.

22. (Withdrawn) The macroporous polymer substrate of claim 21, wherein the monofunctional methacrylates are selected from the group consisting of glycidyl methacrylate, and 2-hydroxyethyl methacrylate.

23. (Withdrawn) The macroporous polymer substrate of claim 21, wherein the polyfunctional methacrylate is selected from the group consisting of ethylene dimethacrylate, and 2,3-dihydroxybutane-1,4-diyl dimethacrylate.

24. (Withdrawn) The macroporous polymer substrate of claim 21, wherein the immobilization chemical is selected from the group consisting of N-(methacryloyl) aminocaproic acid N-hydroxy succinimide ether, 4-isothiocyanate-N-(methacryloyl) benzylamine, and N-(5,6-di-O-isopropylidene) hexyl acrylamide.

25. (Withdrawn) The macroporous polymer substrate of claim 21, wherein the porogenic solvent is selected from the group consisting of cyclohexanol and dodecanol.

26. (Withdrawn) The macroporous polymer substrate of claim 21 comprising 4-30% GMA, 2-20% of EDMA, 0-5% MAAHSE, 48-60% cyclohexanol, and 0-12% dodecanol.

27. (Withdrawn) The macroporous polymer substrate of claim 21 comprising 4-30% GMA, 2-20% of DHDM, 0-5% ITCMBA, 48-60% cyclohexanol, and 0-12% dodecanol.

28. (Withdrawn) The macroporous polymer substrate of claim 21 comprising 4-30% GMA, 2-20% of EDMA, 0-5% ITCMBA, 48-60% cyclohexanol, and 0-12% dodecanol.

29. (Withdrawn) The macroporous polymer substrate of claim 21 comprising 4-30% GMA, 2-20% of DHDM, 0-5% MAAHSE, 48-60% cyclohexanol, and 0-12% dodecanol.

30. (Withdrawn) The macroporous polymer substrate of claim 21 comprising 4-30% HEMA, 2-20% of EDMA, 0-5% MAAHSE, 48-60% cyclohexanol, and 0-12% dodecanol.

31. (Withdrawn) The macroporous polymer substrate of claim 21 comprising 4-30% HEMA, 2-20% of DHDM, 0-5% ITCMBA, 48-60% cyclohexanol, and 0-12% dodecanol.

32. (Withdrawn) The macroporous polymer substrate of claim 21 comprising 4-30% HEMA, 2-20% of EDMA, 0-5% ITCMBA, 48-60% cyclohexanol, and 0-12% dodecanol.

33. (Withdrawn) The macroporous polymer substrate of claim 21 comprising 4-30% HEMA, 16% of DHDM, 0-5% MAAHSE, 48-60% cyclohexanol, and 0-12% dodecanol.

34. (Withdrawn) A macroporous polymer substrate comprising:

a monofunctional methacrylate;

a polyfunctional methacrylate; and

a solvent.

35. (Withdrawn) The macroporous polymer substrate of claim 34, wherein the monofunctional methacrylate is selected from the group consisting of glycidyl methacrylate, and 2-hydroxyethyl methacrylate.

36. (Withdrawn) The macroporous polymer substrate of claim 34, wherein the polyfunctional methacrylate is selected from the group consisting of ethylene dimethacrylate, and 2,3-dihydroxybutane-1,4-diyl dimethacrylate.

37. (Withdrawn) The macroporous polymer substrate of claim 34, wherein the solvent is selected from the group consisting of cyclohexanol and dodecanol.